What is claimed is:

1. A comparative inspection device comprising:

a stage on which an object is mounted and which moves said object;

a detector for detecting an image of said object on said stage, said image comprising a plurality of inspection image regions, and for outputting an image signal; and

an image processing unit for receiving said image signal, determining a plurality of offsets for said plurality of inspection image regions relative to a plurality of corresponding reference image regions, and determining a selected offset out of a set of offsets of the plurality of offsets; wherein said set has at least one high reliability offset of said plurality of offsets.

2. The comparative inspection device of claim 1, wherein said plurality of corresponding reference image regions are related to a time delayed plurality of inspection image regions.

3. The comparative inspection device of claim 1, wherein said selected offset is used to align an entire inspection image and an entire reference image.

4. The comparative inspection device of claim 1, wherein a reliability of an offset of said set is a high reliability offset if a pattern on an image region of said first image regions is dense and is a low reliability offset if said pattern is sparse.

5. The comparative inspection device of claim 1 wherein a reliability of an offset of said set is evaluated by comparing said offset with a predicted offset from past variations of offsets.

6. A method for aligning comparative inspection images comprising:

an image detection means for detecting a plurality of inspection image regions ;

an offset determining means for detecting offsets for said plurality of inspection image regions;

an offset selection means for determining a selected offset with a high reliability from said offsets; and

an alignment means for aligning an entire inspection image and an entire reference image using said selected offset.

7. A method for aligning a first image having a circuit pattern in a semiconductor material with a second image, using an computer, said method comprising:

dividing said first image into a plurality of regions;

dividing said second image into a plurality of corresponding regions;

determining a first region offset of a first region of said plurality of regions from a first corresponding region of said plurality of corresponding regions; and

using said first region offset in determining an image offset for said first image.

8. The method of claim 7 wherein said first region offset is an offset with a high reliability.

9. The method of claim 7 further comprising:

determining a second region offset of a second region of said plurality of regions from a second corresponding region of said plurality of corresponding regions; and

wherein said first region offset is used in determining said image offset for said first image, only if said first region offset has high reliability; and

wherein said determining said image offset for said first image further comprises, using said second region offset, if said second region offset has high reliability.

10. The method of claim 9 further comprising:

when said first region offset and said second region offset are used in determining said image offset for said first image, said determining said image offset for said first image further comprises:

determining a maximum correlation value using a first correlation matrix associated with said first region offset and using a second correlation matrix associated with said second region offset; and

selecting said image offset from a group consisting of said first region offset and said second region, said selecting based on said maximum correlation value.

11. The method of claim 7 wherein, when images are received consecutively, full-image offset reliability of said image offset for said first image is evaluated and, if said full-image offset reliability is low, said first image is aligned using a past offset having a high full-image offset reliability.

12. The method of claim 7 wherein, when images are received consecutively, if an evaluation of full-image offset reliability for said image offset determines that full-image offset reliability is high, said image offset is stored as reference data for subsequent image alignments.

13. The method of claim 7 wherein, when images are received consecutively, full-image offset reliability is determined by comparing collected past offsets with high full-image offset reliability with said image offset.

14. A method for adjusting detection sensitivity in the inspection of images of a semi-conductor material, comprising:

determining a reliability value for an image offset of an image;

if said image offset has low reliability, evaluating if an alignment error is critical for said image; and

responsive to said evaluating, if said alignment error is critical, lowering detection sensitivity.

15. The method of claim 14 wherein said image offset is calculated using a plurality of region offsets, wherein a region offset of said plurality of region offsets is determined using a part of said image.

16. The method of claim 14 wherein said alignment error is critical, when said alignment error results in a detection error.

17. The method of claim 14 wherein said reliability is a full image offset reliability.

18. The method of claim 14 wherein said reliability value is based on a pattern density of said image.

19. The method of claim 14 wherein said reliability value is based on a comparison of said image offset with a predicted offset, said predicted offset derived from past image offsets.

20. The method of claim 19 wherein said predicted offset is derived using an extrapolation from a characteristic curve of past image offsets.

21. The method of claim 19 wherein said predicted offset is derived using an extrapolation from a characteristic curve of past image offsets.

22. A method for aligning an inspection image and a reference image, wherein a difference between said inspection image and said reference image is used in determining defects in a semiconductor material, said method comprising:

partitioning said inspection image into a plurality of sub-images;

partitioning said reference image into a corresponding plurality of sub-images;

forming a plurality of sub-image sets, each sub-image set comprising a sub-image of said plurality of sub-images and a corresponding sub-image of said corresponding plurality of sub-images;

determining a plurality of offsets for said plurality of sub-image sets;

determining an image offset using a plurality of selected offsets from said plurality of offsets; and

aligning said inspection image with said reference image using said image offset.

23. The method of claim 22 wherein said plurality of selected offsets are high reliability offsets.

24. The method of claim 23 wherein a selected offset of said plurality of selected offsets is of high reliability, when a correlation matrix of said selected offset has a largest value above a predetermined threshold.

25. The method of claim 23 wherein a reliability for a selected offset of said plurality of selected offsets is determined using edge information in an associated sub-image of said plurality of sub-images.

26. The method of claim 23 wherein a reliability for a selected offset is determined using a pattern density for an associated sub-image of said plurality of sub-images.

27. The method of claim 22 wherein an offset of said plurality of offsets is determined using a correlation matrix for a sub-image set of said plurality of sub-image sets.

28. The method of claim 27 wherein said offset is a selected offset when said correlation matrix has a largest value above a predetermined threshold.

29. The method of claim 22 wherein said determining said image offset using selected offsets, comprises using correlation matrices associated with said selected offsets to determine a composite correlation matrix, and using said composite correlation matrix to determine said image offset.

30. A comparative inspection device for aligning a plurality of images of a semiconductor wafer, comprising:

a detector, comprising a plurality of sensor channels, for receiving a current image of said plurality of images, wherein a sensor channel of said plurality of sensor channels receives a portion of said current image; and

an image processing unit coupled to said sensor channel for determining an offset between said portion of said current image and a corresponding portion of a previous image of said plurality of images.

31. The comparative inspection device of claim 30 wherein said offset is used in determining an alignment offset for said current image.

32. The comparative inspection device of claim 30, wherein said determining said offset, comprises:

receiving said corresponding portion by said sensor channel before said sensor channel receives said portion;

storing said corresponding portion in a delay memory; and

comparing said portion in said sensor channel with said corresponding portion from said delay memory to determine said offset.

33. The comparative inspection device of claim 30, further comprising a delay memory for storing said corresponding portion.

34. The comparative inspection device of claim 30, wherein said offset is a high reliability offset.

35. The comparative inspection device of claim 30, further comprising:

a delay memory coupled to said plurality of sensor channels, said delay memory storing corresponding portions of a previous image;

wherein said image processing unit is coupled to said delay memory and said plurality of sensor channels, said image processing unit comprising:

a plurality of comparison channels, each comparison channel of said plurality of comparison channels comprising, one sensor channel of said plurality of sensor channels associated with one portion of said current image and a section of said delay memory associated with one corresponding portion of said previous image;

an offset unit for determining a plurality of channel offsets for said plurality of comparison channels; and

an image offset unit for determining said alignment offset for said current image, using at least one high reliability offset from said plurality of channel offsets.

36. The comparative inspection device of claim 35, wherein said plurality of comparison channels operate in parallel.

37. The comparative inspection device of claim 35, wherein said offset unit determines a channel offset of said plurality of channel offsets by determining a correlation matrix for a comparison channel of said plurality of comparison channels.

38. A computer program product stored on a computer readable medium for aligning a first image having a circuit pattern in a semiconductor material with a second image, said computer program product comprising:

code for dividing said first image into a plurality of regions;

code for dividing said second image into a corresponding plurality of regions;

code for determining a first region offset of a first region of said plurality of regions from a first corresponding region of said corresponding plurality of regions; and

code for using said first region offset in determining an image offset for said first image.